The genera *Phoenicopsis* HEER and *Pseudotorellia* FLORIN were common elements of the Mesozoic floras in Northern Asia. Detached leaves and their fragments belonging to these genera have similar morphological but different epidermal features. Unfortunately, only morphology of many *Phoenicopsis* and *Pseudotorellia* leaves were described, therefore some identifications are doubtful. Numerous *Phoenicopsis* findings were reported from the Jurassic of Western Siberia and south of Eastern Siberia, but they are unknown in the Cretaceous of these regions. Cretaceous species of *Phoenicopsis* with epidermal structure studied were described from the north of Eastern Siberia and Northeastern Russia: five – from the Early Cretaceous and three – from the Late Cretaceous. Two species (*P. mirabilis* and *P. vassilevskiana*) were reported from the Berriasian–Valanginian of Aldan River, and three species (*P. annae*, *P. parva* and *P. silapensis*) came from the Aptian of Indigirka and Kolyma rivers. Three Late Cretaceous species were described from the Turonian–Senonian of Arkagala River (*P. glabra*, *P. papullosa* and *P. steenstrupii*). Besides this, brachiblasts with bundles of narrow linear leaves attached lacking preserved cuticle were identified as *P. ex gr. angustifolia* from the Turonian–Coniacian of Arman River (Magadan oblast’). Revision of leaves from the Turonian of New Siberia Island, described originally as Torellia sp., shows that these leaves are most similar to *Phoenicopsis papullosa* from Arkagala. That is the northernmost finding of the genus in Russia.

No findings of Pseudotorellia leaves were reported from the Jurassic of north of Eastern Siberia and Northeastern Russia, and they were not numerous in the Cretaceous of these regions, unlike in Western Siberia and south of the Eastern Siberia. Three *Pseudotorellia* species with characteristic epidermal features were described from the Early Cretaceous of Yakutia: *P. nordenskjoeldii* from the Hauterivian–Barremian of Bulunsky District, *P. emarginata* from the Aptian of Indigirka River, and *P. tjukansis* from the Albian of Lena River basin. Recently, we found very small *Pseudotorellia* leaves in the Berriasian–Valanginian of Kenkeme River (Lena River basin). *Pseudotorellia parvifolia*, sp. nov. (in press.) is described based on morphological and epidermal features. Only two *Pseudotorellia* species were reported from the Late Cretaceous of this area: *P. insolita* from the Turonian–Coniacian of Vilyui River and *P. postuma* from Arkagala.